

AMENDMENTS TO THE CLAIMS

1. (currently amended) Dosimeter for detecting high-energy neutron radiation ~~having~~
comprising:
a neutron converter_i; and
a detection element_j;
~~characterized in that~~ wherein the neutron converter comprises metal atoms (7)
which convert the energy of the neutrons to be detected into protons, alpha particles
and other charged nuclei in a suitable energy range so that they are detectable.
2. (currently amended) Dosimeter from claim 1, wherein the metal atoms (7) of the
neutron converter (3) have an atomic number of $Z > 15$, preferably $Z > 20$.
3. (currently amended) Dosimeter from claim 1 ~~or 2~~, wherein the neutron converter (3)
comprises titanium, chrome, vanadium, iron, copper, wolfram and/or lead atoms.
4. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein
the metal atoms (7) of the neutron converter (3) are stable in the sense of
radioactivity.
5. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein
the neutron converter (3) contains metal atoms (7) with different atomic numbers.
6. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein
the neutron converter (3) comprises metal atoms (7) of alloys.

7. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter ~~(3)~~ comprises at least two layers ~~(3a, 3b)~~ with metal atoms ~~(7)~~ of different atomic numbers.
8. (currently amended) Dosimeter from claim 1, wherein the neutron converter ~~(3)~~ comprises layers ~~(3a to 3e)~~ with metal atoms ~~(7)~~ where essentially only metal atoms ~~(7a to 7e)~~ with a specific atomic number are included in each layer
9. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the layers ~~(3a to 3e)~~ of the neutron converter ~~(3)~~, viewed from the side of the dosimeter ~~(1)~~ facing the neutron radiation, contain metal atoms ~~(7a to 7e)~~ with descending atomic numbers.
10. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein at least one of the layers ~~(3a to 3e)~~ with metal atoms ~~(7)~~ is configured as metal foil, preferably as rolled metal foil, or polymer foil sputtered with metal.
11. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the sequence of the layers ~~(3a to 3e)~~ with metal atoms ~~(7a to 7e)~~ of different atomic numbers is matched to the energy spectrum of the neutron radiation.
12. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter ~~(3)~~, viewed from the side of the dosimeter ~~(1)~~ facing the neutron radiation, has ⁶Li atoms and/or ¹⁰B atoms and/or ¹⁴N atoms ~~(9)~~ in front of the detection element ~~(5)~~ – preferably arranged in a thin layer.

13. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein at least two dosimeter elements with different metal atoms ~~(7)~~ for measuring the energy and/or angular distribution can be housed in a casing.
14. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter ~~(3)~~ has a hydrogenous polymer between the metal atoms ~~(7)~~ and the ^6Li atoms and/or ^{10}B atoms and/or ^{14}N atoms ~~(9)~~.
15. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter ~~(3)~~ comprises layers where the first layer ~~(3a)~~ facing the neutron radiation contains metal atoms, the second layer ~~(3c)~~ the hydrogenous polymer and the third layer ~~(3b)~~ ^6Li and/or ^{10}B and/or ^{14}N atoms ~~(9)~~.
16. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter ~~93~~ has fields (N1, N2, N3) with different structures arranged spatially next to each other.
17. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein a number of dosimeter elements ~~(1a to 1h)~~ can be arranged preferably symmetrically on the surface of a cone in order to carry out a local dosage measurement and a directional distribution measurement.
18. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein a number of dosimeter elements can be arranged on a phantom in order to carry out a directional measurement.

19. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the detection element ~~(5)~~ comprises at least one passive element and/or at least one active element.
20. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the passive element comprises organic high-molecular polymer, preferably polycarbonate or cellulose nitrate (preferably C39 or macroful), and/or an inorganic crystal and/or mineral, preferably a thermoluminescent crystal, in particular LiF, and/or inorganic glasses and/or an inorganic crystal.
21. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the active element has a semi-conductor, preferably silicon.
22. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein provision is made for a photon dosimeter.
23. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the converter layers and the detection element can be housed in a casing which has a front and back wall and side walls.
24. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the side walls contain borium, and/or cadmium and/or nitrogen (^{14}N) and/or lithium atoms (^6Li).